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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 09/785,884
Filing Date: February 15, 2001
Appellant(s): PHADNIS ET AL.

Narendra Reddy Thappeta
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/27/2007 appealing from the Office action mailed 10/17/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection of claims 79, 80, and 82 under §112, second paragraph is withdrawn.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 6721334	Ketcham	4-2004
US 5781726	Pereira	7-1998
US 5964837	Chao et al	10-1999

Simpson ("RFC 1661: Point-to-Point Protocol", July 1994)

Rosenberg et al. ("An RTP Payload Format for User Multiplexing," May 1998)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1.   Claims 1-4, 8-10, 14-16, 21-23, 25, 29, 30, 35-40, 42, 46-50, 59, 60, 69, 72, 75, and 78-85 are

rejected under 35 U.S.C. 103(a) as being unpatentable over Ketcham (U.S. Patent Number

6,721,334) in view of Pereira (U.S. Patent Number 5,781,726).

2.   Ketcham disclosed a method for improving the efficiency of a packet-based network

by using aggregate packets. In an analogous art, Pereira disclosed a method for managing

polling traffic in a set of connection oriented sessions between end stations in a network.

Both systems deal with data transfer from at least one end node, through a first router or

edge device, through a second router or edge device, and to at least one second end node.

3.   Concerning the independent claims, although Ketcham describes a system in which

different types of data packets can be aggregated together, he did not explicitly state the use

of a keep-alive message or poll request. However, Pereira's system is focused on the polling

of point-to-point devices and explicitly states the use of a poll request from a first to a second

end system and a poll response from the second to the first end system. It would have been

obvious to one of ordinary skill in the art at the time of the applicant's invention to modify

the system of Ketcham by adding the ability to use keep-alive messages as the data packets as

provided by Pereira. Here the combination would satisfy the need for an improved

connection oriented protocol for systems that maintain a number of end users that share a

common link. See Pereira, column 4, lines 12-17. This rationale also applies to those

dependent claims utilizing the same combination.

4.   Thereby, the combination of Ketcham and Pereira discloses:

- <Claim 1>

    A method of processing a plurality of keep-alive messages generated by a
corresponding plurality of end systems, each of said plurality of keep-alive messages
being designed to request the status of a corresponding point to point (PPP) session
implemented on a communication network, said method comprising: receiving in an
aggregation device (Ketcham, figure 4, item 308) said plurality of keep-alive messages
(Pereira, column 4, lines 31-34); generating in said aggregation device an aggregated
request packet which includes data indicating that the status of said PPP sessions is
requested (Ketcham, column 7, line 62 through column 8, line 4, wherein the
aggregated packet contains the poll requests as disclosed by Pereira); and sending said
aggregated request packet to a peer aggregation device (Ketcham, figure 4, item 314).

- <Claim 2>

    The method of claim 1, further comprising: receiving said aggregated request
packet in said peer aggregation device (Ketcham, column 8, lines 15-22); indicating the
status of said plurality of sessions in an aggregated reply packet (Pereira, column 6,
lines 1-6, wherein Pereira's response polls may be aggregated at Ketcham's router 314);
and sending said aggregated reply packet to said aggregation device (Ketcham, figure
4, inherently data packets can also flow from router 314 to router 308).

- <Claim 3>

    The method of claim 1, further comprising receiving in said aggregation device
an aggregated reply packet from said peer aggregation device, wherein said aggregated

reply packet indicates the status of at least some of said plurality of PPP sessions

(Pereira, column 6, lines 1-6).

- <Claim 4>

    The method of claim 3, further comprising sending from said aggregation

device a proxy keep-alive reply message to one of said plurality of end systems

originating a corresponding one of said keep alive-messages without waiting for said

aggregated reply packet (Pereira, column 5, lines 45-47).

- <Claim 8>

    The method of claim 1, wherein said communication network is implemented

using one of frame relay, ATM and IP networks (Ketcham, column 1, lines 33-48).

- <Claim 9>

    The method of claim 1, wherein said aggregation device is one of a network

access server and home gateway (Ketcham, column 4, lines 37-43).

- <Claim 10>

    A method of processing an aggregated request packet in an aggregation device,

wherein said aggregated request packet is received from a peer aggregation device and

indicates that the status of a plurality of point-to-point sessions is requested, said

method comprising: examining said aggregated request packet to determine that the

status of said plurality of point-to-point sessions is requested (Ketcham, column 8,

lines 15-22, wherein the aggregated packet contains the poll requests as disclosed by

Pereira); determining the status of each of said plurality of point-to-point sessions

(Pereira, column 6, lines 1-6 and 50-55); generating an aggregated reply packet

indicating the status of said plurality of point- to-point sessions (Pereira, column 6,

lines 1-6, wherein Pereira's response polls may be aggregated at Ketcham's router 314);

and sending said aggregated reply packet to said peer aggregation device (Ketcham,

figure 4, inherently data packets can also flow from router 314 to router 308).

- <Claim 14>

    The method of claim 10, wherein said aggregation device comprises one of a

network access server (NAS) and a home gateway implemented in a communication

network (Ketcham, column 4, lines 37-43).

- <Claim 15>

    An aggregation device for processing a plurality of keep-alive messages

generated by a corresponding plurality of end systems, each of said plurality of keep-

alive messages being designed to request the status of a corresponding point to point

(PPP) session implemented on a communication network, said aggregation device

comprising: an input interface receiving said plurality of keep-alive messages

(Ketcham, figure 4, item 308 and Pereira, column 4, lines 31-34); a message aggregator

coupled to said input interface, said message aggregator examining said plurality of

message and generating data according to a format indicating that the status of said

PPP sessions is requested (Ketcham, column 7, line 62 through column 8, line 4,

wherein the aggregated packet contains the poll requests as disclosed by Pereira); and

an output interface sending an aggregated request packet on said communication

network to a peer aggregation device, said aggregated request packet containing said

data generated by said message aggregator (Ketcham, figure 4, item 314).

- <Claim 16>

  The aggregation device of claim 15, further comprising an encapsulator encapsulating said data in a packet suitable for transmission on said communication network (Pereira, column 2, lines 19-25, wherein encapsulation is inherent to PPP).

- <Claim 21>

  An aggregation device for processing a plurality of keep-alive messages generated by a corresponding plurality of end systems, each of said plurality of keep-alive messages being designed to request the status of a corresponding point to point (PPP) session implemented on a communication network, said aggregation device comprising: first means for receiving said plurality of keep-alive messages (Ketcham, figure 4, item 308 and Pereira, column 4, lines 31-34); means for generating an aggregated request packet which includes data indicating that the status of said PPP sessions is requested (Ketcham, column 7, line 62 through column 8, line 4, wherein the aggregated packet contains the poll requests as disclosed by Pereira); and means for sending said aggregated request packet to a peer aggregation device (Ketcham, figure 4, item 314).

- <Claim 22>

  The aggregation device of claim 21, further comprising second means for receiving an aggregated reply packet from said peer aggregation device (Ketcham, figure 4, inherently data packets can also flow from router 314 to router 308), wherein said aggregated reply packet indicates the status of at least some of said plurality of PPP sessions (Pereira, column 6, lines 1-6).

- \<Claim 23\>

    The aggregation device of claim 22, further comprising means for sending a proxy keep-alive reply message to one of said plurality of end systems originating a corresponding one of said keep alive-messages without waiting for said aggregated reply packet (Pereira, column 5, lines 45-47).

- \<Claim 25\>

    An aggregation device for processing an aggregated request packet, wherein said aggregated request packet is received from a peer aggregation device and indicates that the status of a plurality of point-to-point sessions are requested, said aggregation device comprising: means for examining said aggregated request packet to determine that the status of said plurality of point-to-point sessions is requested (Ketcham, column 8, lines 15-22, wherein the aggregated packet contains the poll requests as disclosed by Pereira); means for determining the status of each of said plurality of point-to-point sessions (Pereira, column 6, lines 1-6 and 50-55); means for generating an aggregated reply packet indicating the status of said plurality of point-to-point sessions (Pereira, column 6, lines 1-6, wherein Pereira's response polls may be aggregated at Ketcham's router 314); and means for sending said aggregated reply packet to said peer aggregation device (Ketcham, figure 4, inherently data packets can also flow from router 314 to router 308).

- <Claim 29>

    The aggregation device of claim 25, wherein said aggregation device comprises one of a network access server (NAS) and a home gateway implemented in a communication network (Ketcham, column 4, lines 37-43).

- <Claim 30>

    An aggregation device for processing an aggregated request packet, wherein said aggregated request packet is received from a peer aggregation device and indicates that the status of a plurality of point-to-point sessions are requested, said aggregation device comprising: an input interface receiving said aggregated request packet (Ketcham, figure 4, item 314, wherein the aggregated packet contains the poll requests as disclosed by Pereira); a de-encapsulator examining said aggregated request packet to determine that the status of said plurality of point-to-point sessions is requested (Ketcham, column 8, lines 15-22); a reply generator determining the status of each of said plurality of point-to-point sessions, and generating an aggregated reply packet indicating the status of each of said plurality of point-to-point sessions (Pereira, column 6, lines 1-6, wherein Pereira's response polls may be aggregated at Ketcham's router 314); and an output interface sending said aggregated reply packet to said peer aggregation device (Ketcham, figure 4, inherently data packets can also flow from router 314 to router 308).

- <Claim 35>

    The aggregation device of claim 30, further comprising a keep-alive processor coupled to said de-encapsulator, wherein said keep-alive processor examines said

aggregated request packet to determine that status of point-to-point sessions is

requested and causes said reply generator to generate said aggregated reply packet

(Ketcham, column 8, lines 15-22 and Pereira, column 6, lines 1-6).

- <Claim 36>

    The aggregation device of claim 30, wherein said aggregation device comprises

one of a network access server (NAS) and a home gateway implemented in a

communication network (Ketcham, column 4, lines 37-43).

- <Claim 37>

    A computer-readable medium carrying one or more sequences of instructions

for causing a aggregation device to process a plurality of keep-alive messages

generated by a corresponding plurality of end systems, each of said plurality of keep-

alive messages being designed to request the status of a corresponding point to point

(PPP) session implemented on a communication network, wherein execution of said

one or more sequences of instructions by one or more processors contained in said

aggregation device causes said one or more processors to perform the actions of:

receiving in an aggregation device (Ketcham, figure 4, item 308) said plurality of keep-

alive messages (Pereira, column 4, lines 31-34); generating in said aggregation device

an aggregated request packet which includes data indicating that the status of said

PPP sessions is requested (Ketcham, column 7, line 62 through column 8, line 4,

wherein the aggregated packet contains the poll requests as disclosed by Pereira); and

sending said aggregated request packet to a peer aggregation device (Ketcham, figure

4, item 314).

- <Claim 38>

    The computer-readable medium of claim 37, further comprising: receiving said

    aggregated request packet in said peer aggregation device (Ketcham, column 8, lines

    15-22); indicating the status of said plurality of sessions in an aggregated reply packet

    (Pereira, column 6, lines 1-6, wherein Pereira's response polls may be aggregated at

    Ketcham's router 314); and sending said aggregated reply packet to said aggregation

    device (Ketcham, figure 4, inherently data packets can also flow from router 314 to

    router 308).

- <Claim 39>

    The computer-readable medium of claim 37, further comprising receiving in

    said aggregation device an aggregated reply packet from said peer aggregation device,

    wherein said aggregated reply packet indicates the status of at least some of said

    plurality of PPP sessions (Pereira, column 6, lines 1-6).

- <Claim 40>

    The computer-readable medium of claim 39, further comprising sending a proxy keep-

    alive reply message to one of said plurality of end systems originating a corresponding

    one of said keep alive-messages without waiting for said aggregated reply packet

    (Pereira, column 5, lines 45-47).

- <Claim 42>

    A computer-readable medium carrying one or more sequences of instructions

    for causing an aggregation device to process an aggregated request packet, wherein

    said aggregated request packet is received from a peer aggregation device and indicates

that the status of a plurality of point-to-point sessions are requested, wherein

execution of said one or more sequences of instructions by one or more processors

contained in said aggregation device causes said one or more processors to perform the

actions of: examining said aggregated request packet to determine that the status of

said plurality of point-to-point sessions is requested (Ketcham, column 8, lines 15-22,

wherein the aggregated packet contains the poll requests as disclosed by Pereira);

determining the status of each of said plurality of point-to-point sessions (Pereira,

column 6, lines 1-6 and 50-55); generating an aggregated reply packet indicating the

status of said plurality of point- to-point sessions (Pereira, column 6, lines 1-6,

wherein Pereira's response polls may be aggregated at Ketcham's router 314); and

sending said aggregated reply packet to said peer aggregation device (Ketcham, figure

4, inherently data packets can also flow from router 314 to router 308).

- <Claim 46>

    The computer-readable medium of claim 42, wherein said aggregation device

comprises one of a network access server (NAS) and a home gateway implemented in

a communication network (Ketcham, column 4, lines 37-43).

- <Claim 47>

    A communication network comprising: a first aggregation device (Ketcham,

figure 4, item 308) receiving a plurality of keep-alive messages (Pereira, column 4,

lines 31-34) generated by a corresponding plurality of end systems, each of said

plurality of keep-alive messages being designed to request the status of a

corresponding point to point (PPP) session implemented on said communication

network, said first aggregation device generating an aggregated request packet which includes data indicating that the status of said PPP sessions is requested (Ketcham, column 7, line 62 through column 8, line 4, wherein the aggregated packet contains the poll requests as disclosed by Pereira), and sending said aggregated request packet (Ketcham, column 7, line 62 through column 8, line 4); and a peer aggregation device (Ketcham, figure 4, item 314) receiving said aggregated request packet and indicating the status of said plurality of sessions in an aggregated reply packet (Pereira, column 6, lines 1-6, wherein Pereira's response polls may be aggregated at Ketcham's router 314), said peer aggregation packet sending said aggregated reply packet to said first aggregation device (Ketcham, figure 4, inherently data packets can also flow from router 314 to router 308), wherein each of said first aggregation device and said peer aggregation device is implemented as a single device (Ketcham, figure 4, items 308 and 314).

- <Claim 48>

     The communication network of claim 47, wherein said first aggregation device is located at an edge of said communication networks (Ketcham, figure 4, item 308).

- <Claim 49>

     The communication network of claim 48, further comprising an access network coupling said first aggregation device to said corresponding plurality of end systems, wherein said plurality of keep-alive messages are received on said access network (Ketcham, figure 4, item 106).

- <Claim 50>

  The communication network of claim 49, wherein said first aggregation device and said peer aggregation device respectively comprise a network access server (NAS) and a home gateway (Ketcham, column 4, lines 37-43).

- <Claim 59>

  The method of claim 1, wherein said aggregation device is physically separate from said plurality of end systems (Ketcham, figure 4, item 308).

- <Claim 60>

  The method of claim 10, wherein said aggregation device is physically separate from said plurality of end systems (Ketcham, figure 4, item 308).

- <Claim 69>

  The method of claim 1, wherein each of said PPP sessions terminates at a home gateway, and wherein said aggregation device comprises a switching device and is in the path of each of said PPP sessions from a corresponding one of said plurality of end systems to said home gateway (Ketcham, figure 4, item 308).

- <Claim 72>

  The aggregation device of claim 30, wherein each of said PPP sessions terminates at a home gateway, and wherein said aggregation device comprises a switching device and is in the path of each of said PPP sessions from a corresponding one of said plurality of end systems to said home gateway (Ketcham, figure 4, item 314).

- <Claim 75>

    The computer readable medium of claim 37, wherein each of said PPP sessions terminates at a home gateway, and wherein said aggregation device comprises a switching device and is in the path of each of said PPP sessions from a corresponding one of said plurality of end systems to said home gateway (Ketcham, figure 4, item 308).

- <Claim 78>

    The aggregation device of claim 21, wherein each of said PPP sessions terminates at a home gateway, and wherein said aggregation device comprises a switching device and is in the path of each of said PPP sessions from a corresponding one of said plurality of end systems to said home gateway (Ketcham, figure 4, item 308).

- <Claim 79>

    The method of claim 1, wherein said receiving, said generating and said sending are performed in an aggregation device implemented as a single device (Ketcham, figure 4, item 308).

- <Claim 80>

    The method of claim 10, wherein said examining, said determining, said generating and said sending are performed in said aggregation device implemented as a single device (Ketcham, figure 4, item 308).

- <Claim 81>

    The aggregation device of claim 21, wherein said means for receiving, said means for generating and said means for sending are contained in said aggregation device implemented as a single device (Ketcham, figure 4, item 308).

- <Claim 82>

    The aggregation device of claim 25, wherein said means for examining, said means for determining, said means for generating and said means for sending are implemented in said aggregation device implemented as a single device (Ketcham, figure 4, item 308)

- <Claim 83>

    The aggregation device of claim 30, wherein said input interface, said de-encapsulator, said reply generator and said output interface are contained in said aggregation device implemented as a single device (Ketcham, figure 4, item 308).

- <Claim 84>

    The computer readable medium of claim 37, wherein said receiving, said generating and said sending are performed by said aggregation device implemented as a single device (Ketcham, figure 4, item 308).

- <Claim 85>

    The computer readable medium of claim 42, wherein said examining, said determining, said generating and said sending are performed by said aggregation device implemented as a single device (Ketcham, figure 4, item 308).

Since the combination of Ketcham and Pereira discloses all of the above limitations, claims 1-4, 8-10, 14-16, 21-23, 25, 29, 30, 35-40, 42, 46-50, 59, 60, 69, 72, 75, and 78-85 are rejected.

5. Claims 5-7, 11, 13, 17-19, 24, 26, 28, 31, 32, 34, 41, 43, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ketcham in view of Pereira, as applied above, further in view of Chao et al. (U.S. Patent Number 5,964,837), hereinafter referred to as Chao.

6. The combination of Ketcham and Pereira disclosed a method for managing polling traffic in a set of connection oriented sessions between end stations in a network that uses aggregation of packets. In an analogous art, Chao disclosed a method of monitoring the topology of a network using polling and event-monitoring. Just as the combination of Ketcham and Pereira, Chao's system is utilized in point-to-point networks.

7. Concerning claim 5, although the combination of Ketcham and Pereira did not explicitly state the use of a table to track the status of sessions in the network, Chao's main focus is a table or topology map, containing information about the operability of nodes in his system. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Ketcham and Pereira by adding a status table as provided by Chao. Here the combination satisfies the need for an improved method of monitoring a point-to-point network. See Chao, column 2, lines 15-24. This rationale also applies to other similar dependent claims utilizing the same combination.

8.   Thereby, the combination of Ketcham, Pereira, and Chao discloses:

- <Claim 5>

    The method of claim 4, further comprising: maintaining a remote status table

in said aggregation device, wherein said remote status table indicates the status of

sessions supported by said aggregation device (Chao, column 5, lines 46-50); updating

said remote status table with the information in said aggregated reply packet (Chao,

column 6, lines 1-13); and generating said proxy keep-alive reply according to said

remote status table (Chao, column 6, lines 55-65).

- <Claim 6>

    The method of claim 5, wherein said proxy keep-alive message indicates that

the corresponding session is alive/OK when a first keep-alive message is received for

the corresponding session (Pereira, column 10, lines 29-38).

- <Claim 7>

    The method of claim 6, further comprising initializing the status of each of

said session to alive/OK such that said proxy keep-alive message in response to said

first keep-alive message indicates alive/OK status (Pereira, column 10, lines 18-28).

- <Claim 11>

    The method of claim 10, wherein said determining comprises accessing a local

status table which contains the status information of at least some of said plurality of

point- to-point sessions (Chao, column 8, lines 52-58).

- \<Claim 13>

  The method of claim 10, wherein said generating comprises setting a bit to one logical value to indicate that a corresponding one of said plurality of sessions is OK/alive, and to another logical value to indicate that said corresponding one of said plurality of session not OK/alive (Chao, column 5, lines 50-53).

- \<Claim 17>

  The aggregation device of claim 16, further comprising: a remote status table indicating the status of sessions supported by said aggregation device (Chao, column 5, lines 46-50); and a de-aggregator receiving an aggregated reply packet from said peer aggregation device, wherein said aggregated reply packet indicates the status of at least some of said plurality of PPP sessions, said de-aggregator updating said remote status table with the information in said aggregated reply packet (Chao, column 6, lines 1-13).

- \<Claim 18>

  The aggregation device of claim 17, further comprising a proxy reply unit sending a proxy keep-alive reply message to one of said plurality of end systems originating a corresponding one of said keep alive-messages without waiting for said aggregated reply packet (Pereira, column 5, lines 45-47).

- \<Claim 19>

  The invention of claim 18, wherein said aggregation device comprises a network access server (Ketcham, column 4, lines 37-43).

- <Claim 24>

   The aggregation device of claim 23, further comprising: means for maintaining a remote status table in said aggregation device, wherein said remote status table indicates the status of sessions supported by said aggregation device (Chao, column 5, lines 46-50); means for updating said remote status table with the information in said aggregated reply packet (Chao, column 6, lines 1-13); and means for generating said proxy keep-alive reply according to said remote status table (Chao, column 6, lines 55-65).

- <Claim 26>

   The aggregation device of claim 25, wherein said means for determining comprises means for accessing a local status table which contains the status information of at least some of said plurality of point-to-point sessions (Chao, column 8, lines 52-58).

- <Claim 28>

   The aggregation device of claim 25, wherein said means for generating sets a bit in said aggregated reply packet to one logical value to indicate that a corresponding one of said plurality of sessions is OK/alive, and to another logical value to indicate that said corresponding one of said plurality of session not OK/alive (Chao, column 5, lines 50-53).

- <Claim 31>

   The aggregation device of claim 30, further comprising a local status table storing the status information of at least some of said plurality of point-to-point

sessions, wherein said reply generator determines the status of said at least some of

said plurality of point-to- point sessions by accessing said local status table (Chao,

column 8, lines 52-58).

- <Claim 32>

     The aggregation device of claim 31, further comprising a session manager

updating the status of said plurality of point-to-point sessions in said local status table

(Chao, column 7, lines 64-66).

- <Claim 34>

     The aggregation device of claim 30, wherein said reply generator sets a bit in

said aggregated reply packet to one logical value to indicate that a corresponding one

of said plurality of sessions is OK/alive, and to another logical value to indicate that

said corresponding one of said plurality of session not OK/alive (Chao, column 5,

lines 50-53).

- <Claim 41>

     The computer-readable medium of claim 40, further comprising: maintaining a

remote status table in said aggregation device, wherein said remote status table

indicates the status of sessions supported by said aggregation device (Chao, column 5,

lines 46-50); updating said remote status table with the information in said aggregated

reply packet (Chao, column 6, lines 1-13); and generating said proxy keep-alive reply

according to said remote status table (Chao, column 6, lines 55-65).

- <Claim 43>

   The computer-readable medium of claim 42, wherein said determining

comprises accessing a local status table which contains the status information of at

least some of said plurality of point-to-point sessions (Chao, column 8, lines 52-58).

- <Claim 45>

   The computer-readable medium of claim 42, wherein said generating

comprises setting a bit to one logical value to indicate that a corresponding one of said

plurality of sessions is OK/alive, and to another logical value to indicate that said

corresponding one of said plurality of session not OK/alive (Chao, column 5, lines 50-

53).

   Since the combination of Ketcham, Pereira, and Chao discloses all of the above

limitations, claims 5-7, 11, 13, 17-19, 24, 26, 28, 31, 32, 34, 41, 43, and 45 are rejected.

9.   Claims 12, 20, 27, 33, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ketcham in view of Pereira further in view of Chao, as applied above, further in view of

Simpson ("RFC 1661: Point-to-Point Protocol," July 1994).

10.   The combination of Ketcham, Pereira, and Chao disclosed a method for managing

polling traffic in a set of connection oriented sessions between end stations in a point-to-

point network by aggregating packets and maintaining a status table. In an analogous art,

Simpson disclosed an overview of the point-to-point protocol.

11.   Concerning claim 12, although the combination of Ketcham, Pereira, and Chao did not

explicitly teach the use of a magic number associated with each session, Simpson taught a

magic number for use with the point-to-point protocol. It would have been obvious to one of

ordinary skill in the art at the time of the applicant's invention to modify the combination of

Ketcham, Pereira, and Chao by adding a magic number as provided by Simpson. Again the

combination satisfies the need for an improved method of monitoring a point-to-point

network. See Chao, column 2, lines 15-24. This rationale also applies to other similar

dependent claims utilizing the same combination.

12.   Thereby, the combination of Ketcham, Pereira, Chao, and Simpson discloses:

- <Claim 12>

    The method of claim 10, wherein said generating comprises including a client

    magic number associated with each of said plurality of point-to-point sessions

    (Simpson, pages 45-47).

- <Claim 20>

    The aggregation device of claim 18, wherein said aggregated request packet

    contains a magic number related to each of the corresponding sessions (Simpson,

    pages 45-47).

- <Claim 27>

    The aggregation device of claim 25, wherein said means for generating includes

    a client magic number associated with each of said plurality of point-to-point sessions

    (Simpson, pages 45-47).

- <Claim 33>

    The aggregation device of claim 30, wherein said reply generator includes in

said aggregated reply packet a client magic number associated with each of said

plurality of point-to-point sessions (Simpson, pages 45-47).

- <Claim 44>

    The computer-readable medium of claim 42, wherein said generating

comprises including a client magic number associated with each of said plurality of

point-to-point sessions (Simpson, pages 45-47).

    Since the combination of Ketcham, Pereira, Chao, and Simpson discloses all of the

above limitations, claims 12, 20, 27, 33, and 44 are rejected.

13.   Claims 67, 68, 70, 71, 73, 74, 76, and 77 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ketcham in view of Pereira, as applied above, further in view of Rosenberg

et al. ("An RTP Payload Format for User Multiplexing," May 1998), hereinafter referred to

as Rosenberg.

14.   The combination of Ketcham and Pereira disclosed a method for managing polling

traffic in a set of connection oriented sessions between end stations in a network that uses

aggregation of packets. In an analogous art, Rosenberg disclosed a method of aggregating

RTP data for multiple users in a point-to-point system. Just as the combination of Ketcham

and Pereira, Rosenberg's system is utilized in point-to-point networks.

15.   Concerning claims 67, 68, 70, 71, 73, 74, 76, and 77, although the combination of

Ketcham and Pereira did not explicitly state that the aggregated message contains less data

than the plurality of the non-aggregated messages together, this is a well known result in

message aggregation. This is evidenced by Rosenberg whose system creates an aggregated

message that is smaller than the sum of the original messages in order to improve packet

efficiency. It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to modify the combination of Ketcham and Pereira by adding the

ability for the message aggregator to generate less data in the aggregated message than the

data forming the plurality of messages together as provided by Rosenberg. Here the

combination satisfies the need for an improved connection oriented protocol for systems that

maintain a number of end users that share a common link. See Pereira, column 4, lines 12-17.

This rationale also applies to similar dependent claims utilizing the same combination.

16.   Thereby, the combination of Ketcham, Pereira, and Rosenberg discloses:

•   <Claim 67>

         The method of claim 1, wherein said generating includes less data in said

         aggregated request packet than the data forming said plurality of keep-alive messages

         together (Rosenberg, page 2, paragraph beginning "On the other hand...").

•   <Claim 68>

         The method of claim 67, wherein each of said plurality of keep-alive messages

         contains an identifier of a corresponding PPP session, wherein said generating

         comprises: selecting said identifier of each of said plurality of keep-alive messages

(Rosenberg, pages 3-5, section 2); and forming said aggregated request packet from said identifiers (Rosenberg, pages 3-5, section 2), whereby said aggregated request packet contains less data than said plurality of keep-alive messages together (Rosenberg, page 2, paragraph beginning "On the other hand...").

- <Claim 70>

    The aggregation device of claim 30, wherein said reply generator includes less data in said aggregated request packet than the data forming said plurality of keep-alive messages together (Rosenberg, page 2, paragraph beginning "On the other hand...").

- <Claim 71>

    The aggregation device of claim 70, wherein each of said plurality of keep-alive messages contains an identifier of a corresponding PPP session, wherein said reply generator operates to: select said identifier of each of said plurality of keep-alive messages (Rosenberg, pages 3-5, section 2); and form said aggregated request packet from said identifiers (Rosenberg, pages 3-5, section 2), whereby said aggregated request packet contains less data than said plurality of keep-alive messages together (Rosenberg, page 2, paragraph beginning "On the other hand...").

- <Claim 73>

    The computer readable medium of claim 37, wherein said generating includes less data in said aggregated request packet than the data forming said plurality of keep-alive messages together (Rosenberg, page 2, paragraph beginning "On the other hand...").

- <Claim 74>

    The computer readable medium of claim 73, wherein each of said plurality of keep-alive messages contains an identifier of a corresponding PPP session, wherein said generating comprises: selecting said identifier of each of said plurality of keep-alive messages (Rosenberg, pages 3-5, section 2); and forming said aggregated request packet from said identifiers (Rosenberg, pages 3-5, section 2), whereby said aggregated request packet contains less data than said plurality of keep-alive messages together (Rosenberg, page 2, paragraph beginning "On the other hand...").

- <Claim 76>

    The aggregation device of claim 21, wherein said means for generating includes less data in said aggregated request packet than the data forming said plurality of keep-alive messages together (Rosenberg, page 2, paragraph beginning "On the other hand...").

- <Claim 77>

    The aggregation device of claim 76, wherein each of said plurality of keep-alive messages contains an identifier of a corresponding PPP session, wherein said means for generating operates to: select said identifier of each of said plurality of keep-alive messages (Rosenberg, pages 3-5, section 2); and form said aggregated request packet from said identifiers (Rosenberg, pages 3-5, section 2), whereby said aggregated request packet contains less data than said plurality of keep-alive messages together (Rosenberg, page 2, paragraph beginning "On the other hand...").

Since the combination of Ketcham, Pereira, and Rosenberg discloses all of the above

limitations, claims 67, 68, 70, 71, 73, 74, 76, and 77 are rejected.

(10) Response to Argument

I.   THE REJECTION OF APPELLANT'S CLAIMS UNDER §103(A) SHOULD BE AFFIRMED
       BECAUSE THE CITED REFERENCES IN COMBINATION TEACH ALL OF THE CLAIMED
       LIMITATIONS.

There must be some articulated reason with some rational underpinning to support

the legal conclusion of obviousness. KSR Int'l v. Teleflex, Inc., 127 S. Ct. 1727, 1741 (2007).

Such reasoning can be based on interrelated teachings of multiple patents and the background

knowledge possessed by a person having ordinary skill in the art. KSR, 127 S. Ct. at 1740-41.

The motivation to combine references under §103 must come from a teaching or

suggestion within the prior art, within the nature of the problem to be solved, or within the

general knowledge of a person of ordinary skill in the art, to look to particular sources, select

particular elements, and to combine them as combined by the inventor. Ruiz v. A.B. Chance

Co., 234 F.3d 654, 665 (Fed. Cir. 2000). An implicit motivation to combine exists when the

combination of references results in a product or process that is more desirable. DyStar

Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co., 464 F.3d 1356, 1368 (Fed.

Cir. 2006).

A.   Claims 1, 15, 21, and 37

Appellant sets forth three reasons why the rejection of claims 1, 15, 21, and 37 is

improper: (1) the action has not set forth how embodiments constructed from the combined

teachings of Ketcham and Pereira would operate akin to the features of claim 1; (2) the action

has not set forth why one skilled in the art would have combined Ketcham and Pereira; and

(3) one of skill in the art would not have combined Ketcham and Pereira to arrive at the

claimed invention. None of these reasons should be found persuasive.

As to Appellant's first reason, it is unclear to what legal test Appellant is referring.

There is no requirement under §103(a) that combined references must "operate akin to the

features" of the claimed invention. Beyond this conclusory statement, Appellant fails to

provide any another reasoning to support their first argument.

As to Appellant's second reason, Appellant merely asserts that "[a]s the burden of P1

is not believed to be met, the burden of P2 is also not believed to have been met."

(Appellant's brief 14:22-23). Again, it is unclear to what legal test Appellant is referring.

In response to Appellant's first two reasons, Examiner maintains that there was a

clear suggestion in Pereira to modify Ketcham and that the combined teachings of Ketcham

and Pereira yield the same features as claimed in claim 1. The rejection clearly set forth that

Ketcham taught every claim feature except for the use of a keep-alive message or poll request.

Pereira was relied upon to teach a keep-alive message (in the form of a poll request that

maintains the connection) (Col. 4, ll. 31-40). One of ordinary skill in the art would have been

motivated to modify Ketcham with Pereira's teaching because the combination improves

upon Ketcham by providing improved connection oriented protocol for systems that

maintain a number of end users that share a common link. (Pereira col. 4, ll. 12-17).

As to Appellant's third reason, Appellant argues that one of ordinary skill in the art

would not have been motivated to combine Ketcham and Pereira to arrive at the claimed

invention. Specifically, Appellant cites Pereira's disclosure that would allow polling traffic

from one communication session while blocking the polling traffic of other sessions in order

to maintain the common link shared between sessions (Pereira, col. 4, ll. 31-40). Appellant

argues that the claimed limitation that "an aggregated request packet...includes data

indicating that the status of said PPP sessions is requested" is in direct contrast to Pereira's

teachings. (Br. 15:15-18).

Appellant's argument should be found unpersuasive because while Pereira may teach

blocking certain polling traffic from other sessions, Pereira does not teach blocking status

data within the allowed polling traffic. There are no features in Appellant's claim that

require all keep-alive messages to be transmitted from all sessions which would be in direct

contrast to Pereira.

Instead, Appellant's claim simply requires requesting the status of a single session and

generating a single aggregate request packet that contains data indicating the status of the

session. Ketcham describes a system in which different types of data packets can be

aggregated together (col. 7, l. 62 – col. 8, l. 4); Pereira discloses generating keep-alive

messages which include data that request the status of sessions (col. 6, ll. 1-6). In response to

a keep alive message, Pereira's system waits for a response from the session indicating that

the session is still alive. Therefore, the combination of Ketcham and Pereira teach the

features as claimed.

B.   Claims 2, 3, 22, 38, 39, and 47

Appellant argues that "the probability of success of the combination of Ketcham and

Pereira operating as in claim 2 is random." (Br. 17). Appellant's argument is essentially that

there was no reasonable expectation of success in combining Ketcham and Pereira because

Ketcham would not include the status of the sessions in an aggregated reply packet. (Br. 17).

Appellant's argument is based on Ketcham's teaching that in aggregating packets, a

router waits a predetermined time period after receiving a first packet. If the router receives a

subsequent packet that will follow the same route or have the same destination as the first

packet within the time period, the router will aggregate the packets. Appellant argues then

that the chances that the status of the session being included in the aggregated packet is

"random" because the inclusion of the status into an aggregate packet is based on receiving

the status information within the time period.

However, Appellant's argument confuses the standards for a reasonable expectation

of success. Even assuming the accuracy of Appellant's argument that the chances of

including status information within an aggregated packet is "random," the test is not

centered on whether success would be random but whether success could be reasonably

predicted. See MPEP §2143.02. Here, one of ordinary skill in the art would have reasonably

expected success in combining Ketcham and Pereira. Pereira teaches that upon sending a first

keep-alive message, a computer waits a certain time period in response. If a reply is received

within the time period, the connection is maintained because the session is still alive. (col. 6,

ll. 1-6).

Pereira teaches waiting for the first reply to the keep-alive message in order to

maintain the connection. Thus, one would have reasonably expected that combining

Ketcham's teaching of waiting a certain time period for aggregating packets and Pereira's

teaching of waiting a certain time period to receive a first reply to a keep-alive message would be successful.

C.   Claims 4, 23, and 40

Appellant argues that the combination of Ketcham and Pereira does not disclose sending keep-alive reply message without waiting for said aggregated reply packet. However, the combination of Ketcham and Pereira do disclose this feature.

Ketcham discloses sending response packets to terminals that do not support aggregated packets. (Col. 3, ll. 14-20 and col. 4, ll. 58-63). Combined with Pereira, the combination teaches submitting keep alive reply messages to those terminals that do not support aggregated packets. The keep alive reply message is sent without the need of waiting for the aggregated reply packet because the terminal does not support aggregated packets.

D.   Claims 5, 17, 24, and 41

Appellant argues that the combination of Ketcham, Pereira and Chao do not disclose a remote status table indicating the status of sessions supported by the aggregation device. Appellant specifically argues that Chao's topology map is different from the claimed remote status table because "the claimed aggregation device may be supporting several point-to-point to [sic] sessions to the same peer aggregation device, potentially on different paths." (Br. 20). Appellant is arguing limitations not present in the claims.

Claim 5 merely requires a remote status table that indicates the status of sessions supported by an aggregation device and updating the table with information in an aggregated reply packet. The combination of Ketcham, Pereira and Chao teach these features.

Chao's topology map reads on Appellant's claimed remote status table because Chao's topology map indicates the status of sessions within the network. (Col. 2, ll. 32-37 and col. 5, ll. 46-50). Chao discloses maintaining the status of connections within the network, where Chao's connections read on Appellant's claimed sessions. Chao also teaches updating the topology map based on reply packets received from polled nodes. (Col. 6, ll. 33-48).

The combination of Ketcham and Pereira's teachings of aggregating keep-alive messages and Chao's topology status map teach the features as claimed. One would have been motivated to modify Ketcham and Pereira with Chao's teachings because the combination improves Ketcham and Pereira by providing a method for monitoring a point-to-point network. (Chao, col. 2, ll. 15-24).

E.   Claims 67, 68, 70, 71, 73, 74, 76, and 77

Appellant argues that the rejection relies upon impermissible hindsight to combine Ketcham, Pereira and Rosenberg. (Br. 22). Then, Appellant specifically argues that Rosenberg is directed to a different technological area from the other references relied upon in the rejection. (Br. 22). Appellant concludes that "the intuitive connection required between the references is simply lacking." (Br. 22).

Appellant does not argue that the combined references do not teach the claimed features. Appellant merely asserts that the references cannot be combined. There is no express requirement that prior art references must be in the same field of invention in order to be combined. Regardless, like Pereira, Rosenberg is directed to aggregating data from multiple users into a single packet (pg. 1, abstract). Rosenberg taught the limitations as claimed and improves upon the combination of Ketcham and Pereira by improving the

efficiency of sending packets through a network by reducing the amount of traffic. (Rosenberg, pg. 2, "On the other hand..." and Pereira, col. 4, lines 12-17).

F.   Claims 79-85

Appellant argues that the combination of Ketcham and Pereira does not disclose that the receiving, generating, and sending functionalities are performed in a single device. (Br. 22-23). Appellant then argues that Pereira's central node combined with Ketcham's router would not result in the claimed invention because "the aggregated request packet would not indicate that the status of multiple PPP sessions is requested." (Br. 23).

The rejection of claims 79-85 did not rely upon Pereira's central node to teach the receiving, generating, and sending functions within a single device. As set forth in the rejection, Ketcham taught all of these functions.

It should also be noted that Appellant is again arguing limitations not in the claims. There is no language in the claims directed towards requesting the status of multiple PPP sessions. The claims merely require requesting the status of a single session.

G.   Claims 10, 25, 30, and 42

Appellant argues that the combination of Ketcham and Pereira do not disclose the claimed step of examining an aggregated request packet to determine that the status of a plurality of point-to-point sessions is requested. (Br. 23). Appellant specifically argues that Ketcham does not disclose that the content of a received aggregated request packet is examined to determine that the status of the sessions is requested.

Appellant's arguments ignore the combination of Ketcham and Pereira which when combined yield the claimed features. The rejection relied on Pereira to disclose poll requests

which are used to request the status of point-to-point sessions that are on different

communication links. Ketcham's teaches that the aggregate packets are examined. Therefore,

the combination of Ketcham and Pereira yields the function of examining aggregate packets,

where the aggregate packets contain the status requests for each of the point-to-point

sessions.

H.   Claims 11, 26, 31, and 43

Appellant argues that the combination of Ketcham, Pereira, and Chao do not disclose

the feature of accessing a local status table which contains the status information of at least

some of said plurality of point-to-point sessions. (Br. 25). Appellant specifically argues that

the combination of Ketcham and Pereira would be inconsistent with the claimed feature. (Br.

25).

Appellant's argument ignore that the rejection relied upon Chao to teach accessing a

local status table which contains the status information of at least some of said plurality of

point-to-point sessions Chao teaches retrieving local connectivity information for the

connections from a node; the connectivity information reads on the status information of the

session. (Col. 5, ll. 52-58). As discussed with respect to claims 5, 17, 24, and 41, Chao improves

upon the combination of Ketcham and Pereira by providing a method for monitoring point-

to-point connections.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the

Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

DC
November 14, 2007

Conferees:
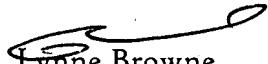
Lynne Browne
Appeals Practice Specialist, TQAS
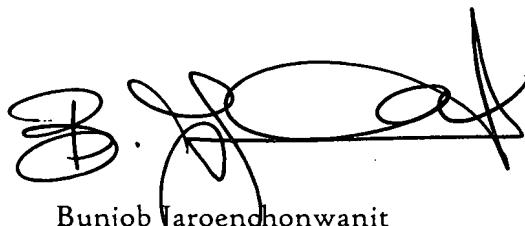
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